

**REMARKS**

Claims 1-21 are pending. By this Amendment, a Substitute Abstract is provided to have a word count less than 150 words. Claims 1, 2, 4, 7-17 and 20 stand rejected. Claims 3, 5 and 18 (and 6, 19 and 21 as well) stand objected to as being dependent on a rejected base claim. By this Amendment, claims 3, 5 and 18 have been rewritten in independent form including all of the limitations of the base and intervening claims. Claim 19 is dependent on claim 18, and claims 6 and 21 are already in independent form.

1. The Office Action rejects claim 1 under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 3,680,124 to Stone et al. in view of U.S. Patent No. 5,255,000 to Puzzo. This rejection is respectfully traversed.

Stone et al. in view of Puzzo does not disclose, teach or suggest all of the limitations specified in the claims. For example, the combination does not disclose, teach or suggest a receiver comprising:

an RF bridge coupled to the processor to receive a reference signal from the processor

as specified in claim 1, and therefore contained in all claims dependent thereon.

The Office Action fails to establish a *prima facie* case that claim 1 would have been obvious to a person of ordinary skill in the art at the time of the invention. The United States Supreme Court established the basic rules for analyzing an invention's obviousness and articulated three factual inquiries to be made in an obviousness determination. *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966). This analysis requires a factual inquiry into (1) the scope and content of the prior art, (2) the differences between the prior art and the claimed subject matter, and (3) the level of skill of a person of ordinary skill in the art at the time the invention was made. The M.P.E.P. instructs that "examiners should apply the test for patentability under 35 U.S.C. §103 set forth in *Graham*." See M.P.E.P. 2141 through 2143.

The determination of obviousness under 35 U.S.C. §103(a) is a legal conclusion that must be based on factual evidence. *Burlington Indus., Inc. v. Quigg*, 822 F.2d 1581, 1584, 3 USPQ2d

Application No. 09/696,956  
Amendment dated November 5, 2003  
Reply to Office Action of August 5, 2003

1436, 1439 (Fed. Cir. 1987). The results of the factual inquires articulated in *Graham v. John Deere Co.* provide the factual finding upon which the legal conclusion of obviousness is to be based. It is respectfully submitted that the Office Action fails to support a legal conclusion of obviousness with factual findings that are supported by evidence. Furthermore, the U.S. Patent and Trademark Office bears the initial burden of establishing that the claimed invention is *prima facie* obvious. *In re Piasecki*, 745 F.2d 1468, 1472, 223 USPQ 785, 788 (Fed. Cir. 1984). M.P.E.P. 4142 instructs that the “examiner bears the initial burden of factually supporting any *prima facie* conclusion of obviousness.”

The present Office Action does not make a record of substantial evidence (e.g., applied art teaches ...) upon which factual findings of claim elements or limitations and motivation to combine or modify can be based sufficient to establish a *prima facie* case for the obviousness of claims. Neither Stone et al. nor Puzzo provide substantial evidence to support factual findings sufficient to establish a *prima facie* case of obviousness as discussed below.

The Office Action admits that Stone et al. does not indicate a processor, but the Office Action asserts that Puzzo teaches a processor 84. The Office Action asserts that “it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Stone, and to include Puzzo’s processor for measurement of angle of arrival and frequencies.”

Puzzo’s processor is not capable of providing “a reference signal from the processor” to be received by an RF bridge as specified in claim 1. Puzzo’s processor is used exclusively to process signals input into its analog-to-digital converters. Even if, *arguendo*, Puzzo’s processor 84 were combinable with the circuit of Stone in some reasonable way, the combination still would not achieve the subject matter specified in claim 1.

Furthermore, the Office Action misconstrues linear mixer 71 of Stone et al. Although the Office Action asserts that linear mixer 71 reads on the third frequency converter specified in claim 1, this assertion is respectfully traversed at least because linear mixer 71 is not a frequency converter.

Stone et al. describes linear mixer 71 as a summer or adder of signals (see column 9, lines 60-61). To perform frequency conversion, a multiplier of signals is required. Stone et al. even

teaches that the operation of a linear mixer is that of a summer. "The output signals of the two mixers 31 and 33 are summed in a linear mixer 41. These two signals are then fed through the first IF strips (not shown) of the receiver 43. The two RF signals are present within the band pass of the IF strips, separated by an amount equal to the scan frequency" (see column 7, lines 39-43 and FIG. 5 which is a simplified version of FIG. 7).

If linear mixer 71 were to operate as a frequency converter (i.e., generating the sum and difference frequencies), as the Office Action contends, the Stone et al. device would cease to work. No signal could pass from the antennas A1 and A2 through the 10 megacycle bandwidth of the 60 megacycle IF strip 73 to the rest of the receiver as discussed below.

First, Stone et al. describes linear mixer 71 as a summer or adder of signals (see column 9, lines 60-61) and not a multiplier. While explaining the operation of this circuit, Stone et al. teaches that the frequency of the satellite signal received at antennas A1 and A2 is assumed to be 400 megacycles minus a Doppler component  $\Delta f$  (see column 9, lines 49-51). Stone et al. also teaches that the frequency from synthesizer 69 into mixer 65 "will be at 340 megacycles minus  $\Delta f$ " (see column 9, lines 52-55). The mixed signal out of mixer 65 is therefore 60 megacycles (i.e., the difference in frequencies). Similarly, Stone et al. also teaches that the frequency from synthesizer 69 into mixer 67 "will be at 340 megacycles plus 250 cycles minus  $\Delta f$ " (see column 9, lines 57-60). The mixed signal out of mixer 65 is therefore 60 megacycles plus 250 cycles (i.e., the difference in frequencies). Then, the signals out of mixers 65 and 67 are added linearly (i.e., summed or superimposed on each other) and fed into a 60 megacycle IF strip 73 that has a bandwidth of 10 megacycles (see column 9, lines 60-64). The 10 megacycles bandwidth of the 60 megacycle IF strip 73 passes both of the signals output from mixers 65 and 67.

However, if as the Office Action contends, linear mixer 71 were to be regarded as a frequency converter producing the sum and difference frequency signals, the sum and difference frequency signals could not pass through the 10 megacycle bandwidth of the 60 megacycle IF strip 73. The sum frequency signal would have a frequency of 120 megacycles plus 250 cycles, and the difference frequency signal would have a frequency of only 250 cycles. Neither signal could pass through the 60 megacycle IF strip 73 that has a bandwidth of 10 megacycles. With the interpretation of linear mixer 71, as contended by the Office Action, no signal would pass from the antennas A1 and A2 through the 10 megacycle bandwidth of the 60 megacycle IF strip

Application No. 09/696,956  
Amendment dated November 5, 2003  
Reply to Office Action of August 5, 2003

73 to the rest of the receiver. The interpretation of linear mixer 71 contended by the Office Action renders the circuit unsuitable for its intended purpose.

Furthermore, there is no motivation to modify linear mixer 71 to be a frequency converter. "If proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification. *In re Gordon*, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984)." See M.P.E.P., section 2143.01, page 2100-99, Rev. 1, Feb. 2000, 7<sup>th</sup> Ed (emphasis in the original).

2. The Office Action rejects claim 2 under 35 U.S.C. §103(a) as being unpatentable over Stone et al. in view of Puzzo, and further in view of U.S. Patent No. 6,147,640 to Wachs. This rejection is respectfully traversed.

Similar to the discussion above with respect to the rejection of claim 1, Stone et al. in view of Puzzo and further in view of Wachs does not disclose, teach or suggest all of the limitations specified in the claims. For example, the combination does not disclose, teach or suggest a receiver comprising:

an RF bridge coupled to the processor to receive a reference signal from the processor

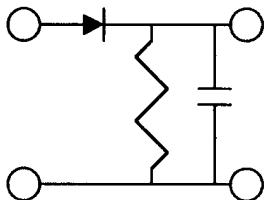
as specified in claim 1, and therefore contained in claim 2 dependent on claim 1.

As a further example, the combination of applied art does not disclose, teach or suggest a receiver having first and second frequency converters that receive corresponding first and second signals from respective antennas and also having a third frequency converter where:

the third frequency converter heterodynes signals from the first and second frequency converters to provide a signal that is characterized by a frequency difference modulated onto the reference signal, the frequency difference being a difference between a frequency of the first signal and a frequency of the second signal

as specified in claim 2.

The Wachs' apparatus shown in FIG. 3 includes summer 40 to add first and second local oscillator signals and envelope detector 46 to detect the sum signal (see column 3, lines 49-55). The circuit of an envelope detector is well known to be:



Signal currents flow one way through (i.e., are rectified by) the diode and through the resistor as the charge builds up on the capacitor. The envelope detector does not heterodyne the first and second oscillator signals. Instead, the envelope detector rectifies the sum of the two signals and low pass filters the rectified result. The filtered rectified result provides the means to detect a null in the summed signal in order to start Wachs' timer 55.

In Wachs, signals  $e_1(t)$  and  $e_2(t)$  are added in linear summer 48 (see column 3, lines 39-40 and 42-44, also column 3, lines 57-59) and the sum is detected in envelope detector 54 (see column 4, line 64 through column 5, line 4). Here too, the envelope detector does not heterodyne the signals together.

The Office Action cites column 4, lines 16-46 of Wachs that includes "If the two amplitude translation frequencies are mixed together and low pass filtered, the resulting sinusoid can be used to indicate the relative phase of the phase shifter ..." Here too, there is no disclosure of heterodyning any signals. Instead, any mixing that is done, is done in linear summer 48 and the detection is done in an envelope detector as is made clear in column 4, line 64 through column 5, line 4.

Again, as discussed with respect to the rejection of claim 1, the Office Action fails to provide a factual basis upon which a legal conclusion of obviousness can be made.

3. The Office Action rejects claims 4 and 7-8 under 35 U.S.C. §103(a) as being unpatentable over Stone et al. in view of Puzzo and Wachs "as applied to claim 3," and further in view of U.S. Patent No.6,140,960 to Kitayoshi. This rejection is respectfully traversed.

With respect to claim 4, the Office Action indicates that claim 3, upon which claim 4 depends, would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. (See the Office Action at page 9, lines 7-9). Claim 3

Application No. 09/696,956  
Amendment dated November 5, 2003  
Reply to Office Action of August 5, 2003

has been rewritten into independent form. In as much as claim 4 is dependent on claim 3, claim 4 is also allowable.

In particular, with respect to claim 4 and as discussed above with respect to the rejection of claim 1, Stone et al. in view of Puzzo and Wachs "as applied to claim 3," and further in view of Kitayoshi does not disclose, teach or suggest all of the limitations specified in the claims. For example, the combination does not disclose, teach or suggest a receiver comprising:

an RF bridge coupled to the processor to receive a reference signal from the processor

as specified in rewritten claim 3, and therefore contained in claim 4 dependent on claim 3.

As a further example, with respect to claim 4, the combination of applied art does not disclose, teach or suggest a receiver comprising a processor and an RF bridge coupled to the processor to receive a reference signal from the processor in which the RF bridge includes:

a frequency source coupled to the first frequency converter; and

a fourth frequency converter coupled to the reference signal and coupled between the frequency source and the second frequency converter

as specified in claim 3, and therefore contained in claim 4 dependent on claim 3.

With respect to claims 7 and 8, the Office Action indicates that claim 6, upon which claims 7 and 8 depend, would be allowable if rewritten in independent form including all of the limitations of the based claim and any intervening claims. (See the Office Action at page 9, lines 7-9). However, claim 6 is now, and has been since originally filed, in independent form. In as much as claims 7 and 8 are dependent on claim 6, claims 7 and 8 are also allowable. Accordingly claims 6 through 8 are, and have always been, in condition for allowance.

In particular, with respect to claims 7 and 8 and similar to the discussion above with respect to the rejection of claim 1, Stone et al. in view of Puzzo and Wachs and further in view of Kitayoshi does not disclose, teach or suggest all of the limitations specified in the claims. For example, the combination does not disclose, teach or suggest a receiver comprising:

an RF bridge coupled to the processor to receive a reference signal from the processor

as specified in claim 6, and therefore contained in all claims dependent thereon.

As a further example, with respect to claims 7 and 8, the combination of applied art does not disclose, teach or suggest a receiver comprising a processor and an RF bridge coupled to the processor to receive a reference signal from the processor in which the RF bridge includes:

first and second frequency converters coupled to respective first and second antennas;

a frequency source coupled to the first frequency converter; and

a third frequency converter coupled to the reference signal and coupled between the frequency source and the second frequency converter

as specified in claim 6, and therefore contained in claims 7 and 8 dependent on claim 6.

4. The Office Action rejects claims 9-11 under 35 U.S.C. §103(a) as being unpatentable over Stone et al. in view of Puzzo, as applied to claim 1, and further in view of U.S. Patent No. 4,717,916 to Adams et al. This rejection is respectfully traversed.

Similar to the discussion above with respect to the rejection of claim 1, Stone et al. in view of Puzzo, and further in view of Adams et al. does not disclose, teach or suggest all of the limitations specified in the claims. For example, the combination does not disclose, teach or suggest a receiver comprising a processor coupled to receive an information signal from an RF bridge in which the processor includes:

a digital frequency source to generate a reference signal based on a signal from a clock source, the reference signal being coupled to the RF bridge

as specified in claim 9, and therefore contained in all claims dependent on claim 9.

The Office Action asserts that Adams et al. "teaches the digital source to generate a reference signal based on the signal from a clock source and the reference signal being coupled to the RF bridge." This assertion is respectfully traversed.

As discussed in more detail below, the correction factor signal G(t) (i.e., see FIG. 26) exists only on the digital formatted side of the analog-to-digital converters 356, 358 and 360, and signal G(t) is not coupled to the RF bridge as specified by claim 9, and therefore contained in all

claims dependent on claim 9. The window function multipliers 362, 364 and 366 cannot be regarded as RF bridges.

Adams et al. describes a processor 28, and depicts processor 28 in FIGS. 1 and 4. As can be seen in FIG. 1, the in-phase signal x output of quadrature phase detector 18 is provided to A to D converter 20 and quadrature phase signal y output of quadrature phase detector 18 is provided to A to D converter 22. After A to D converters 20, 22 convert the in-phase signal x and the quadrature-phase signal y into digital formats, the digitally formatted time sampled x and y signals are provided to processor 28 (see column 10, lines 1-22). As can be seen in FIG. 4, processor 28 receives the digitally formatted time sampled x and y signals and transforms them into the frequency domain in temporal to frequency transformation device 172 (see column 13, lines 30-44). In one of the embodiments of Adams et al., illustrated in FIG. 26, window function multipliers 362, 364 and 366 are interposed between the analog-to-digital converters 356, 358 and 360 and the temporal to Doppler transformation device 372. Processor 370 generates a correction factor signal G(t) and provides this signal G(t) to the window function multipliers 362, 364 and 366. However, contrary to assertions in the Office Action, the correction factor signal G(t) is not a reference signal coupled to the RF bridge as specified in claim 9 and thus contained in all claims dependent on claim 9. Instead, signal G(t) is described as a correction factor signal "to correct the complex voltage temporal functions for spectral smearing" (see column 35, line 31 through column 36, line 43). The spectral smearing issues are described from column 31, line 65 through column 35, line 30.

Furthermore, Stone et al. in view of Puzzo, and further in view of Adams et al. does not disclose, teach or suggest any motivation for modifying any combination of Stone et al. in view of Puzzo and Adams et al. into the receiver specified in claim 9, and therefore contained in all claims dependent on claim 9. To establish a *prima facie* case of obviousness, the Patent and Trademark Office must demonstrate by substantial evidence that the prior art relied upon, coupled with the knowledge generally available in the art that the time of the invention, contains some suggestion or incentive that would have motivated an ordinarily skilled person to modify the subject matter of a reference or combine the subject matters of the references to achieve the claimed subject matter. *In re Fine*, 837 F.2d 1071, 1074, 5 USPQ2d 1596, 1598 (Fed. Cir. 1988). M.P.E.P. 2143.01 instructs that "Obviousness can only be established by combining or

modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art.”

Establishment of a suggestion or incentive to modify or combine prior art references requires substantial evidence of such suggestion or incentive. The factual question of motivation is material to patentability, and it cannot be resolved on a subjective belief of unknown authority. Office Action assertions of such suggestion or motivation, without a prior art reference as evidentiary support, is merely subjective belief and is insufficient to constitute substantial evidence upon which a legal conclusion can be based. *In re Lee*, 61 USPQ2d 1430 (Fed. Cir. 2002). *In re Lee* describes a two fold requirement for the Board of Patent Appeals and Interferences to establish a motivation to modify. First, the Board must make reasoned findings of fact, based on evidence on record. Second, the Board must also explain the reasoning by which the findings are deemed to support the Board’s conclusion.

However, the present Office Action does not make a record of substantial evidence (e.g., applied art teaches ...) upon which factual findings of motivation to modify can be based sufficient to establish a *prima facie* case for the obviousness of the claims.

The Office Action asserts “it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Stone above, and to include Adams’s correction signal for locating a target, such that a target can be accurately located.” This assertion is respectfully traversed. As discussed below with respect to Adams et al. being non-analogous art to Stone et al. in view of Puzzo, Adams et al. describes an active radar that seeks to resolve multiple targets in three dimensions (one of which is range). In contrast, Stone et al. and Puzzo describe only passive interferometers incapable of resolving targets in range. The correction signal G(t) described in Adams et al. is only useful in shaping the temporal signals (i.e., the range signals) of the Adams et al. radar. Stone et al. and Puzzo could not use this correction signal at least because Stone et al. and Puzzo cannot resolve targets in range.

Perhaps this lack of motivation to modify Stone et al. is, at least in part, the natural result of Adams et al. being non-analogous art to Stone et al. in view of Puzzo. See *In re Oetiker*, 977 F.2d 1443, 1446, 24 USPQ2d 1443, 1445 (Fed. Cir. 1992) (“In order to rely on a reference as a basis for rejection of an applicant’s invention, the reference must either be in the field of the

applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the inventor was concerned."). Adams et al. is non-analogous art to Stone et al. in view of Puzzo, and therefore, is not properly combinable with Stone et al. in view of Puzzo.

First, Adams et al. is in a different field of inventive endeavor than the invention of either Stone et al. or Puzzo. The Adams et al. invention relates to radar, or in the words of Adams et al., "to pulsed sounder imaging" (column 1, lines 6-7). In contrast, both Stone et al. and Puzzo et al. relate to interferometers. Radars require active transmission of signals and measurement of the reflected pulses, and interferometers are purely passive receivers.

Secondly, Adams et al. is not reasonably pertinent to the particular problem with which either Stone et al. or Puzzo was concerned. See *In re Clay*, 966 F.2d 656, 659, 23 USPQ2d 1058, 1060-61 (Fed. Cir. 1992) ("A reference is reasonably pertinent if, even though it may be in a different field from that of the inventor's endeavor, it is one which, because of the matter with which it deals, logically would have commanded itself to the inventor's attention in considering his problem."). Adams et al. is generally pertinent to three dimensional imaging of multiple moving targets (see column 1, lines 6-9), and the window function multipliers 356, 358 and 360 of FIG. 26 of Adams et al. are pertinent to corrections of spectral smearing. Stone et al. and Puzzo are not pertinent to this particular problem. At least because Stone et al. and Puzzo relate to interferometers, they are incapable of resolving targets in range and therefore cannot resolve a target in three dimensions and have no need to correct spectral smearing.

With respect to claim 10 and similar to the discussion above with respect to the rejection of claim 1, Stone et al. in view of Puzzo, and further in view of Adams et al. does not disclose, teach or suggest all of the limitations specified in the claims. For example, the combination does not disclose, teach or suggest a receiver comprising a processor coupled to receive an information signal from an RF bridge in which the processor includes:

circuitry to detect a frequency difference from the information signal based on the signal from the clock source

and the circuitry to detect includes:

a first Fourier transformer having a first center frequency; and

Application No. 09/696,956  
Amendment dated November 5, 2003  
Reply to Office Action of August 5, 2003

a second Fourier transformer having a second center frequency, the first center frequency being different than the second center frequency

as specified in claim 10, and therefore contained in all claims dependent on claim 10.

The Office Action asserts that window function multipliers WFM are Fourier transformers. This assertion is respectfully traversed.

The window function multipliers are not part of the circuitry to detect that is part of the processor as specified in claim 10. Adams et al. describes the processor as element 370 in FIG. 26.

Furthermore, window function multipliers are multipliers that multiply, on a time sample by time sample basis, a time sampled digitally formatted signal from the analog-to-digital converters and a time sampled digitally formatted signal G(t) from the processor. The window function multipliers do not perform Fourier transformation. The window function multipliers are not Fourier transformers as specified in claim 10, and therefore contained in all claims dependent on claim 10.

With respect to claim 11 and similar to the discussion above with respect to the rejection of claim 1, Stone et al. in view of Puzzo, and further in view of Adams et al. does not disclose, teach or suggest all of the limitations specified in the claims. For example, the combination does not disclose, teach or suggest a receiver comprising a processor coupled to receive an information signal from an RF bridge in which the processor includes:

circuitry to detect a frequency difference from the information signal based on the signal from the clock source

and the circuitry to detect includes a digital frequency generator that generates:

a first digital signal at the first center frequency coupled to the first Fourier transformer; and

a second digital signal at the second center frequency coupled to the second Fourier transformer

as specified in claim 11.

Application No. 09/696,956  
Amendment dated November 5, 2003  
Reply to Office Action of August 5, 2003

The Office Action asserts that the output fA1/fA2 of receiver 338 of FIG. 26 and the output fB1/fB2 of receiver 340 of FIG. 26 constitute first and second digital signals at first and second center frequencies, and thus, that the digital frequency generator specified in claim 11 reads on receivers 338 and 340 of FIG. 26. These assertions are respectfully traversed.

The receivers 338 and 340 are not the digital frequency generator that is part of the circuitry to detect that is part of the processor as specified in claim 11. Adams et al. describes the processor as element 370 in FIG. 26, and element 370 does not include receivers 338 and 340.

5. The Office Action rejects claims 12-17 under 35 U.S.C. §103(a) as being unpatentable over Stone et al. in view of Puzzo and Adams et al. as applied to claim 10, and further in view of U.S. Patent No. 4,903,030 Maitre. This rejection is respectfully traversed.

As discussed above with respect to claim 9, Stone et al. in view of Puzzo and Adams et al. as applied to claim 10, and further in view of Maitre does not disclose, teach or suggest all of the limitations specified in the claims. For example, the combination does not disclose, teach or suggest a receiver comprising a processor coupled to receive an information signal from an RF bridge in which the processor includes:

a digital frequency source to generate a reference signal based on a signal from a clock source, the reference signal being coupled to the RF bridge

as specified in claim 9, and therefore contained in all claims dependent on claim 9.

The Office Action asserts that frequency discriminator 27 is coupled to frequency analysis 26 for angular discrimination of targets. The applied art combination, including Maitre, does not disclose, teach or suggest the reference signal as specified by claim 9 and does not disclose, teach or suggest the receiver having Fourier transformers as specified by claim 10 even if, *arguendo*, frequency discriminator 27 is coupled to frequency analysis 26 for angular discrimination of targets. Accordingly, all claims dependent on either claim 9 or claim 10 include a feature that is absent from Stone et al. in view of Puzzo and Adams et al. as applied to claim 10, and further in view of Maitre.

Application No. 09/696,956  
Amendment dated November 5, 2003  
Reply to Office Action of August 5, 2003

In particular, claims 12 and 13 are dependent, either directly or indirectly, on both claims 9 and 10. Claims 14 and 15 are dependent on claim 9.

As to claims 16 and 17, Stone et al. in view of Puzzo and Adams et al., and further in view of Maitre does not disclose, teach or suggest all of the limitations specified in the claims. For example, the combination does not disclose, teach or suggest a method that includes:

producing an information signal onto which the frequency difference has been modulated

and

analyzing the information signal to determine the frequency difference

where the frequency difference is the frequency difference present at first and second antennas as specified in claim 16 and therefore contained in all claims dependent thereon.

As to claim 16, the Office Action asserts that one needs only to refer to claims 1 and 2 for the method for “capture a frequency difference” and for “analyzing the information to determine the frequency difference.” This assertion is respectfully traversed. As discussed above with respect to claim 1, the linear mixer 71 of Stone et al. is not a frequency converter. For at least the reasons discussed above with respect to claim 1 and 2, the applied art does not disclose, teach or suggest the producing the information signal and analyzing the information signal as specified by claim 16, and therefore contained in claim 17 dependent on claim 16.

As to claim 17, the Office Action asserts that one needs only to refer to claims 11 and 16 for the method for a method of analyzing by forming first and second Fourier transforms. This assertion is respectfully traversed. For at least the reasons discussed above with respect to claim 11 and 16, the applied art does not disclose, teach or suggest forming the first and second Fourier transforms as specified by claim 17.

6. The Office Action rejects claim 20 under 35 U.S.C. §103(a) as being unpatentable over Stone et al. in view of Puzzo, Wachs and Adams et al. “as applied to claim 11,” and further in view of U.S. Patent No. 3,789,410 to Smith et al. This rejection is respectfully traversed.

Initially, it should be noted that claim 11 has not been rejected over Stone et al. in view of Puzzo, Wachs and Adams et al. Accordingly, this rejection must be read to mean that claim 20

Application No. 09/696,956  
Amendment dated November 5, 2003  
Reply to Office Action of August 5, 2003

is rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 3,680,124 to Stone et al. in view of U.S. Patent No. 5,255,000 to Puzzo and U.S. Patent No. 4,717,916 to Adams et al. "as applied to claim 11," and further in view of U.S. Patent No. 6,147,640 to Wachs and U.S. Patent No. 3,789,410 to Smith et al.

Similar to the discussion above with respect to the rejection of claims 16 and 17, Stone et al. in view of Puzzo, Wachs and Adams et al., and further in view of Smith et al. does not disclose, teach or suggest all of the limitations specified in the claims. For example, the combination does not disclose, teach or suggest a method that includes:

producing an information signal onto which the frequency difference has been modulated

and

analyzing the information signal to determine the frequency difference

where the frequency difference is the frequency difference present at first and second antennas as specified in claim 16 and therefore contained claims 17 and 20 dependent on claim 16. Furthermore, as discussed above, Stone et al. in view of Puzzo, Wachs and Adams et al., and further in view of Smith et al. does not disclose, teach or suggest forming the first and second Fourier transforms as specified by claim 17, and therefore contained in claim 20 dependent on claim 17.

By traversing all of the above rejection based on the specific argument discussed above, I do not intend to imply that other grounds do not exist for traversing any or all rejections.

7. The Office Action objects to claims 3, 5, 6, 18, 19 and 21 as being dependent upon a rejected base claim, but indicates that these claims would be allowable if rewritten in independent form including all of the limitation of the base claim and any intervening claims. Claims 6 and 21 were already in independent form, and accordingly are in condition for allowance. Claims 3, 5 and 18 have been rewritten in independent form and are accordingly in condition for allowance. Claim 19 is dependent on claim 18 and accordingly is in condition for allowance.

Application No. 09/696,956  
Amendment dated November 5, 2003  
Reply to Office Action of August 5, 2003

**CONCLUSION**

In view of the present amendments and remarks, withdrawal of the rejection of the claims is earnestly solicited. It is respectfully submitted that the present application is in condition for allowance. Prompt reconsideration and allowance of the application are earnestly solicited. Should the examiner believe that any further action is necessary to place the application in condition for allowance, the examiner is invited to contact the undersigned applicant at the telephone number listed below.

Respectfully submitted,

  
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